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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,497	09/25/2003	Seok-Jun Won	5649-962DV	3524

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EXAMINER	
NOVACEK, CHRISTY L	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/672,497	WON ET AL.	
	Examiner	Art Unit	
	Christy L. Novacek	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-19* is/are rejected.

7)☒ Claim(s) *20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/051,908.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This Office Action is in response to the preliminary amendment filed September 25, 2003.

Claim Objections

Claim 14 is objected to because of the following informalities: The end of line 10 to line 11 of claim 14, recites the limitation of "the insulating layer". This is redundant, as the beginning of line 10 of claim 14 already recites that the high resistive layer is "formed on the insulating layer". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Segawa et al. (US 6,083,785).

Regarding claim 14, Segawa discloses an integrated circuit substrate, a low resistive layer (6b) defining an upper capacitor electrode and a low resistive layer of a resistor pattern in a region displaced from the upper capacitor electrode, an insulating layer (8) formed on the upper capacitor electrode and the low resistive layer of the resistor pattern, and a high resistive layer (ILD) formed on the insulating layer, the low resistive layer, and the high resistive layer defining a resistor pattern in the region of the integrated circuit substrate displaced from the upper capacitor electrode (Fig. 1a-1g; col. 8, ln. 65 – col. 10, ln. 10).

Regarding claim 15, the low resistive layer is made of doped polysilicon and which has a specific resistance of at least 100 μΩ•cm.

Regarding claim 16, the low resistive layer can include tungsten (col. 17, ln. 35-42).

Regarding claim 17, the insulating layer (8) is made of SiO_2 (col. 9, ln. 45-52).

Regarding claim 18, the high resistive layer (an insulator) has a specific resistance of at least 100 μΩ•cm.

Regarding claim 19, the high resistive layer (an insulator) has a specific resistance of at least 1000 μΩ•cm.

Allowable Subject Matter

Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of the allowable subject matter of claim 20 is the inclusion therein, in combination as currently claimed, of the limitation of forming a low resistive layer that functions as both an upper electrode of a capacitor and a portion of a resistor pattern, forming an insulating layer over the low resistive layer and depositing a high resistive layer made of doped polysilicon on the insulating layer and the low resistive layer. This limitation is found in claim 21 and is neither disclosed nor taught by the prior art of record, alone or in combination.

The primary reason for the indication of the allowable subject matter of claim 21 is the inclusion therein, in combination as currently claimed, of the limitation of forming a low resistive layer that functions as both an upper electrode of a capacitor and a portion of a resistor

pattern, forming an insulating layer over the low resistive layer, depositing a high resistive layer on the insulating layer and the low resistive layer and also forming a TiN layer in between the low resistive layer and the insulating layer. This limitation is found in claim 21 and is neither disclosed nor taught by the prior art of record, alone or in combination.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Koike et al. disclose a process of forming a low resistive layer on a substrate wherein the low resistive layer functions as both an upper electrode of a capacitor and as a portion of a resistor pattern that is displaced from the upper capacitor electrode. An insulating layer is formed on the low resistive layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christy L. Novacek whose telephone number is (571) 272-1839. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLN
March 22, 2004